TECHNICAL REVIEW DOCUMENT
for
MODIFICATION TO OPERATING PERMIT 95OPEA041

Centex Eagle Gypsum, LLC
Eagle County
Source ID 0370029

Prepared by Jacqueline Joyce
October 5, 1998
Revised October 21, 1998

I. Purpose:

This document establishes the decisions made regarding the requested modifications to the Operating Permit for Eagle Gypsum. This document provides information describing how the type of modification was determined (i.e. minor or significant), the modeling inputs and results as well as describing the changes made to the permit as requested by the source and the changes made due to the Division's analysis. This document is designed for reference during review of the proposed permit by EPA and for future reference by the Division to aid in any additional permit modifications at this facility. The conclusions made in this report are based on the information provided in the original requests for modification submitted to the Division on August 12 and 14, 1998, additional submittals of September 15, 1998 and numerous telephone conversations with the source.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised Construction Permit.

This narrative is intended only as a adjunct to the reviewer and has no legal standing.

II. Description of Permit Modification Request/Modification Type

The Operating Permit for Eagle-Gypsum was issued on June 17, 1997. The permit was modified on April 27, 1998 to reflect an overall increase in production. This requested modification includes clarifying language on the dryer due to the previous permit modifications and adding a silo for storage of starch (dry additives). There are no emission increases associated with the language changes on the dryers and the addition of the starch silo would increase emissions by the following:

Pollutant	Uncontrolled Increase tons/yr	Controlled Increase tons/yr
PM	3.3	0.033
PM_{10}	3.3	0.033

III. Modeling

The increase in emissions due to the permit modifications requested did not exceed threshold levels for modeling (5 tpy PM_{10}) per the Division's Modeling Guidance therefore modeling was not required.

IV. Discussion of Modifications Made

In addition to the requested modifications made by the source, the Division used this opportunity to include changes to make the permit more consistent with recently issued permits as well as correct errors or omissions identified during inspections and/or discrepencies identified during review of this modification.

The Divison has made the following revisions, based on recent internal permit processing decisions and EPA comments, to the Eagle Gypsum Operating Permit in addition to the source's requested modifications. These changes are as follows:

Section I - General Activities and Summary

The language in Condition 1.3 was modified to more accurately address the status of previously issued construction permits. Condition 1.4, identification of state-only conditions, was modified to reflect the status of General Condition 17. The language was modified in Condition 3.1 to more completely describe the PSD status of this source.

Section II - Specific Permit Terms

1. Changes to applicable requirement citations: The language “as modified under the provisions of Section I, Condition 1.3" was added after the construction permit number in the citation for the following conditions: 1.1 thru 1.4, 1.6, 2.1, 2.2, 3.1, 3.2, 4.1, 4.2, 5.1 thru 5.4, 6.1, 6.2 and 7.1. The language was added to address the status of previously issued construction permits. The NSPS citation was either corrected or added to the citation in the following conditions: 2.1, 2.3, 3.1, 3.3, 5.1, 5.5, 8.1 and 8.3. The NSPS citation was not added to all conditions and in some cases was not correct. In order to be consistent within this permit, the Division added the NSPS citation to all conditions that were NSPS requirements. Note that both the construction permit number and the NSPS appear in the citation for these applicable requirements. Finally, the construction permit number was removed from the citation on Condition 7.2. Although this is an applicable requirement, it was never identified in the construction permit and therefore it is misleading for the construction permit number to remain in the citation.

2. Corrections: Conditions 1.4, 5.4 and 6.2 were modified to require that fuel use be recorded on the 1st working day rather than the 1st day of each month. In addtion the Division added the requirement that fuel use be recorded within one hour of recording hours of operation. The Division believes that requiring the source to record information on the 1st day of the month may be overly burdensome on sources that may not operate every day. Therefore, the language was changed to require the source to record fuel use on the 1st working day of the month. In addition, the Division added the language to require that fuel use be recorded within one hour of recording hours of operation. This requirement was included to obtain more accurate data for fuel allocation and determining hourly fuel use over the period.

3. EPA required changes: Conditions 1.2 (portable monitoring), 1.5 and 6.3 (natural gas and opacity) were changed to the language approved by EPA. In addtion the language in Condition 1.3 was changed as it was deemed to be similar to the language in Conditions 1.5 and 6.3 and therefore could be unacceptable to EPA. The second sentence in Condition 1.3 was replaced with the following “In the absence of evidence to the contrary, compliance with the SO_2 shall be presumed whenever natural gas or propane is used as fuel for these turbines”.

Section IV - General Conditions

The language in General Condition 17 was changed to reflect the current status of this requirement. Condition 17 was previously only enforceable by state law, however, recent changes to Colorado Regulation No. 15 have made portions of the regulation federally enforceable and portions enforceable only by state law. A typographical error in General Condition 28 was corrected. The second paragraph referred to Regulation No. 7, Section III.C.3, while the reference

should have been to Regulation No. 7, Section VIII.C.3.

Appendices

In Appendix B, Part I a line in the semi-annual compliance report was added for "General Conditions".

The Division addressed the source's requested modifications as follows:

Section I - General Activities and Summary

The source had requested the addition of the starch storage silo to the Operating Permit. The source had also requested that the language describing the wallboard dryers be described as "4-zone" dryers, not "3-zone" dryers. The addition of a zone was approved with the previous permit modification. The table in Condition 5.1 was updated to add the starch storage silo and to correct the number of zones on the wall board dryer.

Section II - Specific Permit Terms

1. Section 4 - Facility Process Sources Not Subject to NSPS OOO Requirements: The source requested that a starch silo be added to the permit. The silo has been added as unit P021. Previously starch was loaded into the dry additives conveying system by bags. The starch silo was added to section 4 of this permit. A separate table was added and Conditions 4.4 thru 4.6 were added to address the starch silo. The analysis for the ash silo is as follows:

Description/Applicable Requirements:

The source provided the following information about the silo.

The following equipment will be added to support the starch silo. A bulk silo with 3439 ft^3 capacity, equipped with a bin vent filter (Griffin Environmental, model No. JV-36-4X), with a control efficiency of 99%. A conveying line (enclosed) from the truck unloading station to the silo. A conveying line (enclosed) from the silo to the day use bin. A blower to blow starch from the silo discharge to the day use bin.

Loading: Bulk tank trunks will unload the starch into the silo by using a self contained blower on the truck. The bin vent will exhaust the pressure in the tank that is generated from this operation. Trucks will unload approximately every three days and will take 1 to 1½ hours to unload.

Unloading: The starch will transfer automatically from the silo to the bin. High and low level indicators in the bin control this operation. Usage of starch will

dictate the frequency and duration of the transfer time. Starch is fed into the process from the bin by a mechanical feeder. Note the starch is fed to the process with the dry additives conveying, which is where it was fed prior to this modification.

Because the silo unloads to a bin that feeds the starch into the dry additives conveying system the Division considers the only additional emissions (it should be noted that the emssions really aren't additional emissions, it is just that the starch loading occurs at the silo now rather than inside the building at the dry additives conveying system) from the silo to be the loading of the silo. The following applicable requirments apply to this unit:

- 20% opacity (Reg 1, Section II.A.1)
- Starch loaded shall not exceed 3,000 tpy (per APEN submitted September 15, 1998)
- Emissions shall not exceed the following (based on 3,000 tpy starch throughput and 99% efficiency of bin vent filter):
  PM 0.33 tons/yr
  PM_{10} 0.33 tons/yr
- Particulate Matter (PM) emissions shall not exceed the following (Reg 1, Section III.C.1.a):
  $PE = 3.59(P)^{0.62}$
  where: PE = particulate emissions in lbs/hr
  P = process weight rate in tons/hr

  Based on a process weight rate of 16.5 tons/yr, which was determined by assuming equal loads of starch would be added to the silo every 3 days and that the loading process would take 1½ hours, the particulate limit was determined to be 20.4 lbs/hr.

Note that although the dry additives conveying system (unit P003 in the permit) is subject to the requirements of NSPS OOO, the starch silo is not. The reason for this is that starch is not defined as a nonmetallic mineral in 40 CFR § 60.671. A nonmetallic mineral is defined as any of the minerals listed in § 60.671 or any mixture of which the majority is any of the listed minerals. The dry additives conveying system is subject to the requirements of NSPS OOO because in the original construction permit application, vermiculite was identified as a dry additive. Vermiculite is a nonmetallic mineral listed in § 60.671. When the starch is mixed with the other dry additives, it is subject to the requirements of NSPS OOO.

Emission Factors:

The Division determined that the grain elevator emission factors would be inappropriate since starch is a finer particulate than the grain. An April 4, 1994

memo from Midwest Research Institute to EPA provides test data for particulate matter emissions from starch drying, transfer, storage, and loading operations. Stack tests were performed on a storage bin, a loadout bin and a bulk loadout collector. All units had fabric filter control devices but no efficiency was identified for these control devices in the memo. Assuming a 99.9% control, these stack test results give emission factors (1.1 lbs/ton and 3.3 lbs/ton) similar to the emission factors for lime processing (product transfer and conveying) identified in AP-42, Section 11.17. Therefore the Division determined that the most appropriate emission factors to be used for determining emissions from the starch silo loading to be factors from EPA's Compliation of Emission Factors (AP-42), January 1995, Section 11.17. An emission factor of 2.2 lbs/ton (product transfer and conveying) will be used for both the PM and PM_{10} emission calculations.

Monitoring Plan:

Conditions 4.4 through 4.6 of the permit identify the monitoring and recordkeeping provisions necessary to monitor compliance with the applicable requirements. Recordkeeping requirements consist of monitoring and recording monthly starch loaded into the silo. Compliance with the particulate limits shall rely on the proper maintenance and operation of the bin vent filter and daily visual observations shall be performed to monitor compliance with the opacity requirements.

Compliance Status:

This unit has not yet been constructed. The source has submitted the APEN as required and will wait until the application for this operating permit minor modification has been deemed complete before constructing the starch silo. Note that for a minor modification of an Operating Permit, per Colorado Regulation No. 3, Part C, Section X.I once the permit application is complete the source may implement the requested changes.

2. Unit P015 - Wallboard Dryers - The source requested that the description of these dryers be changed to reflect that there are 4 zones in the wallboard dryer. The addition of a zone was approved in the previous modification to this permit, yet was inadvertently not corrected in the permit. The change was made as the source requested.

Appendices

In Appendix B, Part I a line in the semi-annual compliance report was added for the starch silo and the description of the wallboard dryer was changed to reflect a four zone dryer.